

ABSTRACT

Techniques are described for employing a set of tags to model phenomena which are smooth and subject to constraints. Tags may be used to model, for example, muscular movement producing speech. In one advantageous application, a set of tags defining prosodic characteristics is developed, and selected tags are placed in appropriate locations of a body of text. Each tag defines a constraint on the prosodic characteristics of speech produced by processing the text. Processing of the body of speech and the tags produces a set of equations which are solved to produce a curve defining prosodic characteristics over the scope of a phrase, and a further set of equations which are solved to produce a curve defining prosodic characteristics of individual words within a phrase. The data defined by the curves is used with the text to produce speech having the prosodic characteristics defined by the tags. A set of tags may be produced by reading of a training text by a target speaker to produce a training corpus reflecting the prosodic characteristics of the target speaker, and then analyzing the training corpus to generate tags modeling the prosodic characteristics of the training corpus.